

# RADIO TEST REPORT

Type of assessment:

**MPE Calculation report**

Manufacturer:

**Ericsson AB**

Hardware Version Identification Number (HVIN):

**AS1614477**

Product Marketing Name (PMN):

**Radio 4461 B77D**

Part number:

**KRC 161 4477/31**

FCC Identifier

**FCC ID: TA8AKRC1614477**

ISED certification number:

**IC: 287AB-AS1614477**

Specification:

- ◆ FCC 47 CFR Part 1 Subpart I, §§1.1307, 1.1310
- ◆ FCC 47 CFR Part 2 Subpart J, §2.1091
- ◆ FCC KDB 447498 D01 General RF Exposure Guidance v06
- ◆ ISED Canada RSS-102 Issue 6 December 15, 2023

## RSS-102 - Declaration of RF Exposure Compliance

ATTESTATION: I attest that, Annex A and the Technical Brief information was prepared by me and is correct; that the device evaluation was performed or supervised by me; that applicable measurement and evaluation methodologies have been followed; and that the device meets the SAR, APD and/or IPD limits of RSS-102.

Date of issue: March 6, 2025

**Andrey Adelberg, Senior EMC/RF Specialist**

Prepared by



Signature

Nemko Canada Inc., a testing laboratory, is accredited by ANSI National Accreditation Board (ANAB).  
The tests included in this report are within the scope of this accreditation.  
The ANAB symbol is an official symbol of the ANSI National Accreditation Board, used under licence.

ANAB File Number: AT-3195 (Ottawa/Almonte); AT-3193 (Pointe-Claire); AT-3194 (Cambridge)



## Lab locations

Company name	Nemko Canada Inc.			
Facilities	<i>Ottawa site:</i> 303 River Road Ottawa, Ontario Canada K1V 1H2  Tel: +1 613 737 9680 Fax: +1 613 737 9691	<i>Montréal site:</i> 292 Labrosse Avenue Pointe-Claire, Québec Canada H9R 5L8  Tel: +1 514 694 2684 Fax: +1 514 694 3528	<i>Cambridge site:</i> 1-130 Saltsman Drive Cambridge, Ontario Canada N3E 0B2  Tel: +1 519 650 4811	<i>Almonte site:</i> 1500 Peter Robinson Road West Carleton, Ontario Canada K0A 1L0  Tel: +1 613 256-9117
Test site identifier	<b>Organization</b>	<b>Ottawa/Almonte</b>	<b>Montreal</b>	<b>Cambridge</b>
	FCC:	CA2040	CA2041	CA0101
	ISED:	2040A-4	2040G-5	24676
Website	<a href="http://www.nemko.com">www.nemko.com</a>			

## Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contained in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

## Copyright notification

Nemko Canada Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.  
© Nemko Canada Inc.

## Section 1 Evaluation summary

### 1.1 MPE calculation for standalone transmission

#### 1.1.1 References, definitions and limits

##### FCC §2.1091(d)

- (2) (2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in §1.1307(b) of this part, except for portable devices as defined in §2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in §2.1093.

**Table 1.1-1:** Table 1 to §1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(i) Limits for Occupational/Controlled Exposure</b>				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842 / f	4.89 / f	*(900 / f <sup>2</sup> )	<6
30–300	61.4	0.163	1.0	<6
300–1500			f / 300	<6
1500–100000			5	<6
<b>(ii) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824 / f	2.19 / f	*(180 / f <sup>2</sup> )	<30
30–300	27.5	0.073	0.2	<30
300–1500			f / 1500	<30
1500–100000			1.0	<30

Notes: f = frequency in MHz. \* = Plane-wave equivalent power density.

## References, definitions and limits, continued

## RSS-102, Section 5.3.2

The electric and magnetic field strength reference levels, power density reference levels, and associated reference period for devices employed by the general public (uncontrolled environment) and controlled-use devices (controlled environment) are specified in table below. Note that the power density limits specified in these tables apply to whole body exposure conditions.

Table 1.1-2: RSS-102— RF field strength and power density limits

Frequency range (MHz)	Electric field strength (V/m rms)	Magnetic field strength (A/m rms)	Power density (W/m <sup>2</sup> )	Reference Period (minutes)
<b>Limits for Controlled Environment</b>				
10–20	61.4	0.163	10	6
20–48	129.8 / $f^{0.25}$	0.3444 / $f^{0.25}$	44.72 / $f^{0.5}$	6
48–100	49.33	0.1309	6.455	6
100–6000	15.60 $f^{0.25}$	0.04138 $f^{0.25}$	0.6455 $f^{0.5}$	6
6000–15000	137	0.364	50	616000 / $f^{1.2}$
15000–30000	0.354 $f^{0.5}$	9.40×10 <sup>-4</sup> $f^{0.5}$	3.33×10 <sup>-4</sup> $f$	616000 / $f^{1.2}$
<b>Limits for Uncontrolled Environment</b>				
10–20	27.46	0.0728	2	6
20–48	58.07 / $f^{0.25}$	0.1540 / $f^{0.25}$	8.944 / $f^{0.5}$	6
48–300	22.06	0.05852	1.291	6
300–6000	3.142 $f^{0.3417}$	0.008335 $f^{0.3417}$	0.02619 $f^{0.6834}$	6
6000–15000	61.4	0.163	10	616000 / $f^{1.2}$
15000–30000	0.158 / $f^{0.5}$	4.21×10 <sup>-4</sup> / $f^{0.5}$	6.67×10 <sup>-5</sup> / $f$	616000 / $f^{1.2}$

Notes:  $f$  = frequency in MHz.

The above table refers to Health Canada's Safety Code 6 for relevant notes and additional information.

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (mW/cm<sup>2</sup> or W/m<sup>2</sup>)

P = power input to the antenna (mW or W)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm or m)

## 1.1.2 EUT technical information

Prediction frequency	3970 MHz
Antenna gain	12 dBi
Number of antennas	4
Maximum transmitter power	46.02 dBm (conducted per port)
Prediction distance (declared)	Controlled: FCC: 152 cm, ISED: 168 cm. General population: FCC 340 cm, ISED 390 cm

## 1.1.3 MPE calculation

Fundamental transmit (prediction) frequency:	3970 MHz	
Maximum measured conducted peak output power:	46.02 dBm	
Cable and/or jumper loss:	2.5 dB	
Maximum peak power at antenna input terminal:	43.52 dBm	
Duty cycle:	100 %	
Maximum calculated average power at antenna input terminal:	22493.65 mW	
Single Antenna gain (typical):	12 dBi	
Number of antennae:	4	
Total system gain:	18.02 dBi	
<b>MPE limit for <u>uncontrolled</u> exposure at prediction frequency:</b>	<b>FCC limit:</b> 1.000000 mW/cm <sup>2</sup> 10.000000 W/m <sup>2</sup>	<b>ISED limit:</b> 0.754308 mW/cm <sup>2</sup> 7.543084 W/m <sup>2</sup>
<b>MPE limit for <u>controlled</u> exposure at prediction frequency:</b>	<b>5.000000 mW/cm<sup>2</sup></b> 50.000000 W/m <sup>2</sup>	<b>4.067162 mW/cm<sup>2</sup></b> 40.671623 W/m <sup>2</sup>
Minimum calculated prediction distance for Uncontrolled compliance:	337 cm	388 cm
Typical (declared) Uncontrolled distance:	340 cm	390 cm
<b>Average power density for uncontrolled at prediction frequency:</b>	<b>0.981640 mW/cm<sup>2</sup></b> 9.816401 W/m <sup>2</sup>	<b>0.746072 mW/cm<sup>2</sup></b> 7.460723 W/m <sup>2</sup>
Minimum calculated prediction distance for Controlled compliance:	151 cm	167 cm
Typical (declared) Controlled distance:	152 cm	168 cm
<b>Average power density for controlled at prediction frequency:</b>	<b>4.911599 mW/cm<sup>2</sup></b> 49.115995 W/m <sup>2</sup>	<b>4.020606 mW/cm<sup>2</sup></b> 40.206064 W/m <sup>2</sup>
<b>Margin of Compliance for <u>uncontrolled</u> environment:</b>	<b>0.08 dB</b>	<b>0.05 dB</b>
with Maximum permitted antenna gain:	18.10 dBi	18.07 dBi
<b>Margin of Compliance for <u>controlled</u> environment:</b>	<b>7.07 dB</b>	<b>7.37 dB</b>
with Maximum permitted antenna gain:	62.59 dBi	62.89 dBi

## 1.1.4 Verdict

The calculation is below the limit; therefore, the product is passing the RF Exposure requirements for the declared distance.

End of the test report